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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,423	12/18/2001	Ronald N. Zuckermann	16141.003	6469

7590 10/16/2007

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EXAMINER	
WESSENDORF, TERESA D	
ART UNIT	**PAPER NUMBER**
1639	

MAIL DATE	DELIVERY MODE
10/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/025,423	ZUCKERMANN ET AL.	
	Examiner	Art Unit	
	T. D. Wessendorf	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-17,21,25-29 and 33-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-17,21,25-29 and 33-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/16/2007 has been entered.

Status of Claims

Claims 13-17, 21, 25-29 and 33-37 are pending and under examination in this application.

Withdrawn Rejection

In view of the amendments to the claims and applicants' arguments the rejections under 35 USC 112, first paragraph and second paragraph; obviousness double patenting and the 35 USC 102 over Liotta have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-17, 21, 25-29, 33-34 and 36-37, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable Liotta (USP 6,153,596) in view of Murphy (PNAS) and Furka et al (Int. J. Peptide Protein Res. 37, 1991, 487-493).

The claimed method of identifying peptoids in a library of different sequence peptoids comprising of the recited steps (i)-(iv) having the formula II is taught by Liotta at col. 7, line 54 up to col. 18, line 11, specifically col.14, lines 40-56. The formula II of the claimed peptoids is disclosed by Liotta at col. 10, line 26 up to line 16, line 39.

Liotta does not disclose peptoids of general formula I as recited in claim 13, for example. Liotta does not further teach a mix and split method. However, Murphy discloses at page 1518, RESULTS and DISCUSSION section up to page 1521, col. 1 that

peptoid with lipid derivatized at the N-end results in a highly efficient transfection agent. The ability to derivatize a defined site in the peptoid side chain will allow for the controlled synthesis of delivery vehicles modified with targeting ligands. Furka discloses at pages 493-493 the numerous advantages in the used of mix and split method. The efficiency of the method is remarkable. The extra advantages might be gained in hunting for new biologically active peptides by directly submitting the simpler mixtures to biological screening. This would make it possible to focus further efforts only on mixtures showing biological activity. Multicomponent peptide mixtures containing components with predetermined sequence and size also offer themselves as useful samples in studies determining the factors, influencing the retention times in HPLC separations. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the peptoid of Murphy in the method of Liotta. It would be further obvious to synthesize the peptoid library of Liotta by mix-and-split synthesis as taught by Furka et al. The advantages disclosed by Murphy, above would provide the motivation to do such substitution. Likewise, the advantages described by Furka in the used of the well-known mix and split

method would provide the motivation to one having ordinary skill in the art to use said method in the synthetic method of Liotta.

Claim 14 is obvious in view of the disclosure of Murphy as to the use robotic synthesizer, page 1517, col. 2.

Claim 26 is obvious in view of the teachings of Liotta as to the advantage in the use of sterol as a side group e.g., sterol tethered in the peptoid chain. See col. 12, lines 20-30 and col. 16, lines 29-39.

Claim 35 is obvious over the teachings of Murphy at page 1517 under Materials and Methods section, which refers to the Zuckermann reference, for example, as similarly done by applicants at page 17, third paragraph.

Claim 37 is obvious over the disclosure of Murphy at page 1518, col. 1.

The elected species are obvious over the disclosure of Murphy at e.g., page 1519, Table 1 up to page 1521.

Response to Arguments

Both Liotta and Murphy are using peptoids of pre-identified sequences for cell transfection. In other words, in their methods a peptoid having a precisely known identity is contacted with an oligonucleotide and subsequently with a cell to effect transfection. In the method of claim 13, however, the chemical identity (sequence) of each individual peptoid is not known

before it is contacted with an ollgonucleotide and a cell. It is only known that it has a sequence encompassed by general formula I, but its particular sequence is not known. Only after the transfection is complete, the sequence of this peptoid is determined, e.g., by tandem mass- spectrometry. The method of claim 13 is a cost-effective method of identifying transfecting agents because it requires less resources directed to identification of peptoid sequences.

In reply, while applicants seemed to acknowledge that both Liotta and Murphy use the same method as claimed, however, applicants argue that both Liotta and Murphy are using peptoids of pre-identified sequences for cell transfection.

The claimed peptoids having the formula I is in essence a pre-identified compound given the definitions for each of the variables in the given formula. It would be within the ordinary skill in the art to determine which combinations from the given possible combinations of the defined formula, the ones that are able to transfect with the oligonucleotide a cell as e.g., by tandem mass spectrometry, as similarly taught by Murphy.

Applicants state that the specification describes a mix-and-split protocol, which is not taught by Liotta and Murphy. A mix-and-split approach may lead to millions of combinatorially synthesized peptoids of different and unidentified sequences.

The sequences of peptoids are unknown because the beads containing individual peptoids are mixed during the synthetic procedure. This protocol is superior to parallel synthesis in its efficiency of generating multiple compounds.

In response, applicants' arguments are not commensurate in scope with the claims, which do not describe the mix, and split approach for at least claim 1. Nonetheless, this advantages disclosed by Furka above in the used of mix and split synthesis would render the claimed synthesis prima facie obvious. Thus, the combined teachings of the prior art would lead one having ordinary skill in the art to the claimed method of identifying a peptoid from the library taught by Liotta or Murphy such that the peptoid can be used to transfect oligonucleotide in a cell.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is(571) 272-0812. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Schultz can be reached on (571) 272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. D. Wessendorf
Primary Examiner
Art Unit 1639

Tdw
October 15, 2007